

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A coating material for a thermal barrier coating having excellent corrosion resistance and heat resistance comprising a substrate, an undercoat made of an aluminum-containing heat-resistant alloy, Cr₂O₃ layer as a middle layer, and a top coat made of ZrO₂ based ceramic.

2. (Original) A coating material for a thermal barrier coating having excellent corrosion resistance and heat resistance comprising a substrate, an undercoat made of an aluminum-containing heat-resistant alloy, Al₂O₃ layer produced on the surface of the undercoat by preferentially oxidizing Al in the components of the undercoat in the presence of Cr₂O₃ layer and Cr₂O₃ layer formed thereon as a middle layer on the undercoat, and a top coat made of ZrO₂ based ceramic.

3. (Currently Amended) A coating material for a thermal barrier coating according to claim 1 or 2, wherein the Cr₂O₃ layer as a middle layer is a chemical densified film having a thickness of 0.2-10 µm obtained by applying an aqueous

solution of one or more selected from chromic anhydride, ammonium chromate and ammonium bichromate and firing it.

4. (Original) A coating material for a thermal barrier coating according to claim 2, wherein the Al_2O_3 layer has a thickness of 1-30 μm .

5. (Currently Amended) A coating material for a thermal barrier coating according to claim 1 ~~or 2~~, wherein the undercoat is a heat-resistant alloy having an Al content of 3-24 mass% and represented by the following chemical formula:



wherein M: one or more selected from Co, Ni and Fe,

X: one or more selected from Y, Hf, Ta, Cs, Ce, La, Th, W, Si, Pt, Mn and B.

6. (Currently Amended) A coating material for a thermal barrier coating according to claim 1 ~~or 2~~, wherein the undercoat is one formed by a spraying process or an electron beam deposition process at a thickness of 30-500 μm .

7. (Currently Amended) A coating material for a thermal barrier coating according to claim 1 ~~or 2~~, wherein the top coat is a ZrO_2 based ceramic coating containing 5-40 mass% of at least one oxide selected from Y_2O_3 , CaO , CeO_2 ,

MgO, SiO₂, Yb₂O₃ and Sc₂O₃ and formed by a spraying process or an electron beam deposition process at a thickness of 50-600 µm.

8. (Original) A method of producing a coating material for a thermal barrier coating having excellent corrosion resistance and heat resistance, which comprises forming an undercoat made of a heat-resistant alloy having an Al content of 3-24 mass% on a surface of a substrate through spraying process or an electron beam deposition process, forming a middle layer of Cr₂O₃ layer having a thickness of 0.2-10 µm by repeating a procedure of applying an aqueous mixed solution of one or more of chromic anhydride, ammonium chromate and ammonium bichromate and firing under heating at 500-900 K for 1-5 hours one time or plural times, and forming a top coat of ZrO₂ based ceramic on the middle layer through a spraying process or an electron beam deposition process.

9. (Original) A method of producing a coating material for thermal barrier coating having excellent corrosion resistance and heat resistance, which comprises forming an undercoat made of a heat-resistant alloy having an Al content of 3-24 mass% on a surface of a substrate through spraying process or an electron beam deposition process, forming a middle layer of Cr₂O₃ layer having a thickness of 0.2-10 µm by repeating a procedure of applying an aqueous mixed solution of one or more of chromic anhydride, ammonium chromate and ammonium bichromate and firing under heating at 500-900 K for 1-5 hours one time or plural times,

heating in an atmosphere or under vacuum or in an inert gas atmosphere at 1200-1500 K for 1-20 hours to form an Al₂O₃ layer produced through preferential oxidation reaction of Al contained in the under coat on the surface of the undercoat just beneath Cr₂O₃ layer as a part of the middle layer, and forming a top coat of ZrO₂ based ceramic on the middle layer.

10. (New) A coating material for a thermal barrier coating according to claim 2, wherein the Cr₂O₃ layer as a middle layer is a chemical densified film having a thickness of 0.2-10 µm obtained by applying an aqueous solution of one or more selected from chromic anhydride, ammonium chromate and ammonium bichromate and firing it.

11. (New) A coating material for a thermal barrier coating according to claim 2, wherein the undercoat is a heat-resistant alloy having an Al content of 3-24 mass% and represented by the following chemical formula:



wherein M: one or more selected from Co, Ni and Fe,

X: one or more selected from Y, Hf, Ta, Cs, Ce, La, Th, W, Si, Pt, Mn and B.

12. (New) A coating material for a thermal barrier coating according to claim 2, wherein the undercoat is one formed by a spraying process or an electron beam deposition process at a thickness of 30-500 μm .

13. (New) A coating material for a thermal barrier coating according to claim 2, wherein the top coat is a ZrO_2 based ceramic coating containing 5-40 mass% of at least one oxide selected from Y_2O_3 , CaO , CeO_2 , MgO , SiO_2 , Yb_2O_3 and Sc_2O_3 and formed by a spraying process or an electron beam deposition process at a thickness of 50-600 μm .